

WHAT IS CLAIMED IS:

1. A method for protecting central nervous system (CNS) cells from glutamate toxicity, which comprises administering to an individual in need thereof an effective amount of:

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- (a) activated T cells which have been activated by Cop 1 or a Cop 1-related peptide or polypeptide; or
- (b) Cop 1 or a Cop 1-related peptide or polypeptide.

2. A method in accordance with claim 1, wherein the individual in need thereof is being treated post-operatively after tumor removal from or surgery on the CNS to protect CNS cells from glutamate toxicity.

3. A method in accordance with claim 1, wherein said administering step comprises administering to said individual an effective amount of activated T cells which have been activated by Cop 1 or a Cop 1-related peptide or polypeptide.

4. A method in accordance with claim 3, wherein said NS-specific activated T cells are autologous T cells, or allogeneic T cells from related donors, or HLA-matched or partially matched, semi-allogeneic or fully allogeneic donors.

5. A method in accordance with claim 4, wherein said T cells are autologous T cells which have been stored or are derived from autologous CNS cells.

6. A method in accordance with claim 4, wherein said T cells are semi-allogeneic T cells.

7. A method in accordance with claim 1, wherein said administering step comprises administering to an individual in need thereof an effective amount of Cop 1 or a Cop 1-related peptide or polypeptide.

8. A method in accordance with claim 7, wherein said Cop 1 or a Cop 1-related peptide or polypeptide is Cop 1.

9. A method in accordance with claim 7, wherein said Cop 1 or a Cop 1-related peptide or polypeptide is a Cop 1-related peptide or polypeptide.

10. A method in accordance with claim 7, in which said Cop 1 or a Cop 1-related peptide or polypeptide is administered in a manner which promotes active immunization of the individual so as to build up a critical T cell response.

11. A method in accordance with claim 1, wherein said Cop 1-related peptide or polypeptide is a random copolymer that cross-reacts functionally with myelin basic protein (MBP) and is capable of competing with MBP on the MHC class II molecule in antigen presentation.

12. A method in accordance with claim 11, wherein said random copolymer comprises one amino acid selected from each of at least three of the following groups:

- (a) lysine and arginine;
- (b) glutamic acid and aspartic acid;
- (c) alanine and glycine; and
- (d) tyrosine and tryptophan.

13. A method in accordance with claim 12, wherein said random copolymer contains four different amino acids, each from a different one of the groups (a) to (d).

14. A method in accordance with claim 13, wherein said four different amino acids are alanine, glutamic acid, lysine and tyrosine.

15. A method in accordance with claim 14, wherein said random copolymer contains three different amino acids, each from a different one of three groups (a) to (d).

16. A method in accordance with claim 15, wherein said random copolymer contains tyrosine, alanine, and lysine.

17. A method in accordance with claim 15, wherein said random copolymer contains tyrosine, glutamic acid and lysine.

18. A method in accordance with claim 15, wherein said random copolymer contains lysine, glutamic acid, and alanine.

19. A method in accordance with claim 15, wherein said random copolymer contains tyrosine, glutamic acid, and alanine.

20. A method for treating injury or disease caused or exacerbated by glutamate toxicity, which comprises administering to an individual having an injury or disease caused or exacerbated by glutamate toxicity an effective amount of:

(a) activated T cells which have been activated by Cop 1 or a Cop 1-related peptide or polypeptide; or

(b) Cop 1 or a Cop 1-related peptide or polypeptide.

21. A method in accordance with claim 20, in which said injury or disease comprises spinal cord injury, blunt trauma, penetrating trauma, hemorrhagic stroke, or ischemic stroke.

22. A method in accordance with claim 20, in which said injury or disease is Diabetic neuropathy, senile dementia, Alzheimer's disease, Parkinson's Disease, facial nerve (Bell's) palsy, glaucoma, Huntington's chorea, amyotrophic lateral sclerosis, status epilepticus, non-arteritic optic neuropathy, or vitamin deficiency.

23. A method in accordance with claim 20, in which said injury or disease is epilepsy, amnesia, anxiety, hyperalgesia, psychosis, seizures, oxidative stress, or opiate tolerance and dependence.

24. A method in accordance with claim 20, in which said injury or disease is associated with abnormally elevated intraocular pressure.

25. A method in accordance with claim 20, in which said injury or disease is other than an autoimmune disease.

26. A method in accordance with claim 20, wherein said administering step comprises administering to said individual an effective amount of activated T cells which have

been activated by Cop 1 or a Cop 1-related peptide or polypeptide.

27. A method in accordance with claim 26, wherein said NS-specific activated T cells are autologous T cells, or allogeneic T cells from related donors, or HLA-matched or partially matched, semi-allogeneic or fully allogeneic donors.

28. A method in accordance with claim 27, wherein said T cells are autologous T cells which have been stored or are derived from autologous CNS cells.

29. A method in accordance with claim 27, wherein said T cells are semi-allogeneic T cells.

30. A method in accordance with claim 20, wherein said administering step comprises administering to an individual in need thereof an effective amount of Cop 1 or a Cop 1-related peptide or polypeptide.

31. A method in accordance with claim 30, wherein said Cop 1 or a Cop 1-related peptide or polypeptide is Cop 1.

32. A method in accordance with claim 30, wherein said Cop 1 or a Cop 1-related peptide or polypeptide is a Cop 1-related peptide or polypeptide.

33. A method in accordance with claim 30, in which said Cop 1 or a Cop 1-related peptide or polypeptide is administered in a manner which promotes active immunization of the individual so as to build up a critical T cell response.

34. A method in accordance with claim 20, wherein said Cop 1-related peptide or polypeptide is a random

copolymer that cross-reacts functionally with myelin basic protein (MBP) and is capable of competing with MBP on the MHC class II molecule in antigen presentation.

35. A method in accordance with claim 34, wherein said random copolymer comprises one amino acid selected from each of at least three of the following groups:

- (a) lysine and arginine;
- (b) glutamic acid and aspartic acid;
- (c) alanine and glycine; and
- (d) tyrosine and tryptophan.

36. A method in accordance with claim 35, wherein said random copolymer contains four different amino acids, each from a different one of the groups (a) to (d).

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37. A method in accordance with claim 36, wherein said four different amino acids are alanine, glutamic acid, lysine and tyrosine.

38. A method in accordance with claim 37, wherein said random copolymer contains three different amino acids, each from a different one of three groups (a) to (d).

39. A method in accordance with claim 38, wherein said random copolymer contains tyrosine, alanine, and lysine.

40. A method in accordance with claim 38, wherein said random copolymer contains tyrosine, glutamic acid and lysine.

41. A method in accordance with claim 38, wherein said random copolymer contains lysine, glutamic acid, and alanine.

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42. A method in accordance with claim 38, wherein said random copolymer contains tyrosine, glutamic acid, and alanine.

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